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PRIZE ESSAY.

[To the following was awarded the prize offered by the publisher of the "American Farmer" for the best Essay on the subject on which it treats—the prize consists of a complete set of the American Farmer (15 vols.), the five volumes of the Farmer & Gardener, and two volumes of the American Farmer new series—the subscription price of which is \$100! Comment on the ability, research and industry of the writer as displayed in the paper, is unnecessary—the all-important subject on which it treats, especially to the Middle and older Southern States, will commend it to the profound consideration of every philanthropist and well-wisher to the prosperity of those sections. The system, or rather the want of system of husbandry which has so long distinguished them, has to a great extent brought the land-holders to that point, which must result in a change of policy, or a continued desertion of the homes of their forefathers and all the endearing ties and associations connected therewith, for the distant regions of the more fertile West. Believing that the Essay of Dr. Horton is calculated, from its plain, practical style, materially to aid in a renovation of our deteriorated lands, we flatter ourselves that the conductors of public journals generally whose circulation is mainly in the agricultural regions, will not be prevented by its length from giving it an insertion in their pages. We contemplate publishing it, together with that to which the second prize is awarded, and an Essay on the Cultivation of Tobacco and the Management of the Plantation, in book form, for more ready and extensive circulation, which shall be published at a cheap rate, and we solicit the co-operation of our friends in giving it an extensive circulation.]

ESSAY

ON THE RENOVATION OF THE SOIL, DETERIORATED BY IMPROVIDENT CULTURE.

By Dr. William L. Horton,

Of Woodlawn, near Abingdon, Harford County, Md.

Agriculture, while it is one of the most healthy occupations, is at the same time one of the most respectable and independent. No situation in life can be conceived more happy than that of the educated farmer, who owns the soil he cultivates, who is out of debt, and who has the means of improving his lands and keeping his estate in good order.

The pleasure experienced by the farmer in seeing the trees and plants of his care flourish, is not to be known nor described to those who are inexperienced in rural economy. Each object possessing vegetative life, that has been nurtured and reared by his attention, seems almost like a part of his family. If the inanimate part of creation can afford him so much pleasure, how much greater must be his delight in witnessing the contented countenances of his bleating flocks and lowing herds!

The intelligent and prudent husbandman does not permit the soil he owns and cultivates to be deteriorated by over cropping; but by a judicious rotation of crops, and renovating applications, so manages his land, that it is

always kept in a progressive state of improvement until it arrives at a maximum, or such a state of fertility that there is no need of further melioration.

On the other hand, the ignorant and reckless farmer, by exhausting crops, by taking all from, and returning nothing to the soil, soon finds it so much exhausted that it becomes inadequate to his support; and in despair he abandons it by turning it out for "old field," millions of acres of which may be noticed from Maryland to Georgia, both inclusive. He then is driven to one of two alternatives; either to sell his miserable worn out acres and migrate westward, or clear up a new farm on his own domain; to do either is generally inconvenient and unpleasant. For a man advanced in years, to be under the necessity of experiencing the toils and hardships incident to clearing up a new farm, at a time when he should be enjoying the *otium cum dignitate*, appears to be reversing the established order of nature. Equally unpleasant, nay, revolting must it be to the sensitive mind, to be driven from the home of his childhood, from the place of his nativity and early associations, from friends and connections, into that which is little better than banishment—the western wilderness—where he is compelled to associate with the most vulgar and uncongenial spirits; the outcasts, in many instances, of European jails and work-houses.

It is to avoid such a catastrophe that we are called upon to exercise our skill and industry, in renovating the lost powers, and resuscitating the dormant energies of the exhausted soil. The subject would afford a wide scope for amplification, for fanciful speculation and fine-spun theoretical reasoning; but we propose to treat it in a plain practical manner, rather in a concise than diffuse style, addressed to the common sense and practical experience of the agricultural community, rather than to the vivid and erring fancy of visionary theorists.

As this essay may be read in different parts of the United States, it may not be improper here to observe, that its practical details will be more particularly adapted to the middle States.

Without any learned or artificial division of the subject, we propose to treat it under several distinct heads, which will be noticed as we progress in our labour; and that which appears to us to claim priority is—

Of the artificial division of the Farm.

Every farm, whether large or small, whether the soil be of good or bad utility, should be divided into at least six fields, for the arable land; in addition to which, if there be any land fit for permanent meadow it may form a seventh field; and it would be well to have three lots of about one acre each, near the barn or dwelling house. There should generally be kept, two in grass for calf pasture, &c.—the other to be tilled, in rotation, in potatoes and other roots and vines. But as we anticipate objections to this division on account of the quantity of fencing required, it is proper that we say something

Of the materials for Fencing.

Chesnut and cedar, for rails, answer the best purpose, and will commonly last about one hundred years, if they be kept from the ground, and if the bushes and briars be not permitted to grow up by their side. That which is commonly called worm fence is thought to answer the best purpose for outside fences; for division there are several choices. Post and rail, the posts made of locust, cedar or chesnut, answers a good purpose. Stone fence may do when distant from the buildings; but it always serves as a harbour for rats and other predatory animals; yet when the materials are at hand it is a good way of using them on account of their durability. The foundation should be laid below frost.

Hedge fence, when constructed of thorn, is too slow

of growth; that on the Orange farm, near Baltimore, has, to the knowledge of the writer, been planted more than twenty-five years; and it cannot at this time be considered as a perfectly safe barrier against hogs and cattle. The proprietor has erected at least two new fences by its side for its protection in that time; the writer thinks three. Among the several substitutes that have been mentioned for them there is none that appears to us so appropriate as the *Morus Multicaulis*. It is quick of growth, tenacious of life, may be propagated to an unlimited extent by layers; and may be so wattled and interwoven as to form an insuperable barrier, in a few years, to all ordinary animals. Beside, silk-worms may be fed on its foliage, a circumstance of no small importance; sheep and cattle will browse on its straggling branches, and thus obviate the use of shears to keep it trimmed. As to the objection of its being too tender to withstand the effects of frost, it is all ideal; for we have left a nursery of these trees out during the past winter, and scarcely a bud has perished. They are to be planted in a hedge this spring, and it is intended to plant these trees by the side of all our division fences, that by the time the fences are decayed we may have a living fence, which shall answer the three-fold purpose above-mentioned. From the knowledge the writer has of this tree he is of opinion that a good fence may be made of it in four or five years.

Of Manures.

Manures are of three kinds, vegetable, animal and mineral. As this is the most important part of our subject we shall give it a full and fair consideration; but we shall be very careful how we advance any thing which has not come within our own observation and experience.

1st. *Vegetable Manures*.—These are numerous; but probably the greatest source of supply is the barn-yard and stable. Several plans have been proposed for the construction of a barn-yard; the best of which is, to let it be a little *dishing*—say from two to three feet, according to size. If the soil be loose or sandy it should be lined with clay to prevent the loss of urine and the soluble part of the manure. This yard is to be well supplied every fall with vegetable matter of some kind for the two-fold purpose of affording the cattle comfortable beds, and to retain the liquid parts of the manure from escaping. Leaves from the adjoining forests answer an excellent purpose; cornstalks and weeds, and for want of something better, bark that has been used by tanners will answer; sea ware, sea weed, or sea grass is excellent for manure. It will of course be proper to prevent the water from the adjoining lands or buildings from running through the barn-yard, as it would carry off much of the valuable part of the manure. In favour of leaves as a manure may be mentioned the fact that they are the principal supply, afforded by nature to the soil of forests, for their support, and that notwithstanding the immense growth of wood and timber such lands produce and sustain, they are by this small annual supply not only kept from impoverishment, but in most cases they are in a progressive state of improvement. What a lesson is to be derived hence by the reflecting farmer! Protection from heat and drying winds, with a small annual return to the soil, are all that are requisite to produce large crops without impoverishment to the soil.

The prudent husbandman will provide racks, if not shelter, for his cattle, from which they may eat their hay, straw, &c. That which they drop or leave may serve to increase the dung-heap.

Husks of the *Vicini Bean*, from which oil has been expressed, may be put, a handful in each hill of corn to great advantage. Cotton Seed, bruised, will answer the same purpose.

The refuse left on the hearths of coal pits, when spread pretty thick, has been found to act beneficially in two or

three ways. First, as a stimulus and permanent manure by the ashes it contains, the decomposition being slow, and thus affording to the soil a supply of carbon, the great food of plants. Secondly, by a mechanical action, on clayey soils, in opening them and making them pervious to moisture. Thirdly, in such soils as are of a cold nature, by the colour given to them, they receive and retain more solar heat.

2. *Animal Manures*, are such as are composed of substances purely animal, among which are *Fish*. On the Chesapeake & Potomac, on Long Island, and in other places herrings and other fish have been used to some considerable extent as manure. The best way to apply them is to plow them under as soon as they are spread, that the soil may absorb the volatile parts which would otherwise be dissipated in the air. In this way they will cause about two good crops, when their substance will be chiefly spent. The practice of catching fish with the object of using them for manure is reprehensible, while there are so many beings in the world who would be glad to get them as food; but we have never known them caught for this express purpose.* They are mostly *offal* from large fishing establishments that are used for manure.

Pickle which is left from curing fish, mixed with ashes or lime, makes an excellent manure.

Blood and Garbage from butchers' shops. Near cities these may be obtained in large quantities, and are well worthy the attention of the husbandman who wishes to improve his soil and raise large crops.

Scrapings of currying shops and tan yards, cannot often be obtained in large quantities; but are worthy of notice.

Ground bones—Mills have been erected for the purpose of reducing bones to powder; and in this way they are used to a great extent for manure; but they are not lasting in their effects; a few bushels to the acre are said to produce one large crop. Lastly, under this head, we mention

The refuse from tallow chandlers, sometimes called *greaves*. This is similar in its effects to that obtained from the butchers, and may be used advantageously in the hill for corn.

From what we have said on *vegetable and animal manures*, the inference will be drawn that they are not lasting in their effects; and that to derive benefit from them long they must be applied often. We are then to seek further and look for something more desirable in its nature that shall, by proper culture, impart to the soil permanent fertility.

3. *Mineral Manures*—These are such as are taken directly from the earth, and are either calcareous or saline; and at the head of them stands that invaluable, that efficient and precious article,

LIME. Of all the blessings bestowed on the husbandman by the beneficent hand of an all-wise Creator, next to pure water, perhaps should be placed *Lime*. It has been well observed that those substances most essential to the life of man, have by the goodness of a divine providence been distributed in greatest abundance, and over the greatest extent of the globe. This is certainly the case with water, which covers a great portion of it, and without which man could not long exist. So with lime, which forms whole chains of mountains, is a component part of all soils, is a constituent part of most grain, and enters essentially into the formation of man, as well as the lower grade of animals. So far as chemical science has developed the resources of nature, *lime* is believed to be the only article that can give *permanent* fertility to soils; and from the most accurate experiments that have been made, on very fertile soils, they have been found to contain at least one-tenth part of lime. In a soil containing the other essential ingredients of *silex*, *alumine* and *vegetable matter* in due proportion, with one-tenth lime, as above stated, nothing can be easier, on the part of the good husbandman, than to keep it in a state of fertility any given length of time.

This is the only substance that can be obtained by agriculturists, generally, in such quantities and at such prices as will admit of its use as a manure, for a restoration of the soil. It may be applied in various ways; but that which has been found best is to spread it on a grass sod, soon after it is slacked, and while in a state of *fine powder*. This part of the process is more essential than at first view may occur to casual observers. If the lime

* An exception may be mentioned in the large flat sea-fish called *skate*, which is unfit for food; they have been caught expressly for manure on the Eastern Shore of Maryland.

be permitted to get so wet, after being slacked, as to form lumps, it will do but little good, as will appear more plain from what we shall say presently. The lime should, as a general rule, be spread in the fall that it may lay through the winter to be dissolved by the cold rains; lime possessing the singular property, perhaps different from any other substance, of being dissolved more readily in cold than in warm water.

It requires, I think, about 600 pounds of cold water to dissolve one pound of lime; hence the impropriety of putting a large quantity on the soil at once, as a considerable portion would in that case, by absorbing carbonic acid from the atmosphere, become what it was before it was burnt—lime stone, or a carbonate of lime.

The quantity proper for different soils must of course vary from 50 to 150 or even 200 bushels; but I would recommend the application of but 50 bushels at once, which quantity may be repeated until the requisite fertility is obtained. Let it be observed that I speak of *un-slacked* lime, when I mention these quantities.

It would not be proper to attempt to lime more than one field a year, and but few can accomplish that, if the field be large; in this way the profits, derivable from liming, will, after the first year, nearly cover the expenses: or at any rate they will greatly assist in the operation.

Let no one however be too sanguine of great and immediate profits; they will come somewhat slow, but sure. In some instances the advantages of liming have been made in such an almost imperceptible manner that farmers have been discouraged. Generally, however, those who have used lime are pleased, and regret that they have not the means of doing it more extensively.

Lime, like all other alkaline manures, should be kept some time on the surface, for the purpose above mentioned,—that it may be dissolved, and that the soil may become saturated with the ley. It should not be wet and lumpy when spread, or it will not be dissolved; but become a carbonate, and do but little good. It never loses any thing by evaporation, and in that respect it is unlike the two former kinds of manure, which we have noticed.

Some eight or ten years ago, a Mr. Nelson, of this county, commenced liming his land at an expense of twenty dollars per acre. He was one of the first, perhaps the very first, and his neighbours thought he was crazy. They found, however, in a few years, when a field of twenty acres produced four hundred barrels of corn—that is 2,000 bushels of shelled corn—that there was "method in his madness."

As it regards the *price* at which a farmer can afford to use lime as a manure, it must be regulated by the price of wheat. According to my estimate, a bushel of wheat should pay for five or six bushels of lime delivered on the farm.

It may be expected that we should offer our views as to the *modus operandi* of lime; this part of the subject we approach with some diffidence, and without any pretension to freedom from error; but as we have embarked on the troublesome ocean of philosophical speculation, we may, as well as our compeers, hazard a conjecture, leaving it to our readers to judge of its accuracy.

Lime cannot long remain in the soil as a calx, calcium, or quick lime; but by its attraction of carbonic acid from the atmosphere, it becomes a carbonate. In this primary action of absorbing carbonic acid, a portion is at the same time taken up by the plant. But why, it may be asked, is lime so durable in its effects upon the soil? That lime has the effect of loosening a heavy, clayey soil is a point conceded by all who have used it on such soils. I do not believe, with professor Ducatel and some other chemists, that the oxalic, or any other *free* acid exists to any considerable extent in any soil; lime then is *not* necessary to neutralize an *acid* in the soil. Calcium, or quick lime is more readily dissolved than the carbonate; and as almost all plants, and particularly wheat and oats, contain a portion of lime, they may receive it as a part of their necessary food in this way. Carbonate of lime, or lime stone, requires a much larger quantity of water to dissolve it, nevertheless it is while in the soil always undergoing a slow decomposition, and is thus taken up by the plant.

It is admitted by all who have used lime on such soils, that it renders clayey ones lighter and sandy soils more compact. The experiments of the writer have been on a soil of the first description—argillaceous—and before he used lime he had great trouble in pulverising it. Land that was limed five or six years ago is at this time quite sufficiently pulverulent and friable.

How does lime produce this effect? Is it merely such

a mechanical division as is effected on clay with sand, or is it something different?

Certain bodies, although they may not enter into chemical union, attract each other—repulsion is a property of other bodies. Let us take quicksilver for instance. The ultimate particles of this metal have an attraction for each other, as may be observed when violence is used to separate them, they form into innumerable spherules, or globules. With some substances it will enter into chemical union—with others it will form no such compound. We never see, nor hear of, a carbonate of quicksilver. It will mix with some metals as an amalgam. Tin, lead, silver, gold, are of this class; but it will not mix with iron. There is such a powerful repulsion existing between turpentine and this metal, that the more you attempt to unite them the more the metal flies into a million parts and utterly refuses an admixture until it is reduced to an impalpable powder or oxide. Honey of the same consistency will not have any such effect.

Lime has a metallic base—calcium—and Orfelia says that clay or argil has also—aluminum—others deny this to clay; but it does not destroy our hypothesis, which is this:—that lime and clay are two distinct heterogeneous bodies; and that so far from having a chemical affinity, or attraction for each other, they are decidedly repellent, and that in attempting to mix them they not only refuse to come in contact, but fly asunder like the balls of an electrometer—or the dust from sealing wax excited by electricity.

If it be said that the division is mechanical, and such as would be effected by sand, we deny the assertion, and can prove to the contrary in two ways. 1st. We say that the same quantity of sand will not have the same effect on clay. 2d. That a *solution* of lime will cause clay to become friable. Then beside the natural food which lime affords to plants it loosens the stiff clayey soils, and renders them permeable to their roots in search of their necessary aliment.

If it be true, as is asserted by many, that lime renders sandy soils more cohesive, it follows as a corollary of what has been said concerning lime and clay, that the other two are more homogeneous in their nature; and that a kind of adhesive attraction exists between them, thus rendering such soils more retentive of moisture.

These are merely speculative opinions of the writer, which may not be new to others; they are so however to him. He attaches no great importance to them; yet thinks them quite as reasonable as some others that have been propagated on higher authority.

We shall probably elucidate the action of lime more fully when we come to speak of gypsum or sulphate of lime.

Ashes after they have been used by the soap boilers, commonly called *spent ashes*. Although ashes, strictly, are a *vegetable* manure, yet on account of the similarity of principle and mode of action we have thought proper to arrange them with the mineral manures. The essential salt of ashes is well known in commerce under the name of potash and pearl ash. It is the vegetable alkali, and bears in its properties, a strong resemblance to the mineral alkali or soda.

Like lime, this manure loses nothing by evaporation; but its tendency is to sink. One hundred bushels of these to the acre, serve as an excellent dressing for wheat, and will last five or six years. Ashes are prompt in their action, and are therefore by some preferred to lime. It is probable that more advantage is to be derived from using the two together than from using either separately.

For corn a compound of three parts ashes and one part plaster, a handful put in each hill, is found to answer an excellent purpose.

Barilla is a name applied to a very impure carbonate of soda, imported from the East Indies, and used by the soap boilers. To get it freed from the quantity of carbonic acid it contains they are obliged to mix with it about one-third of lime. The compound, after the alkali is extracted, is sold under the name of *Barilla ashes*. They are sold about two cents a bushel less than the *black ashes*, but are not worth half as much. They have been used to some extent as manure.

Nitrate of Soda is said to exist in large quantities in Atacama in Peru, South America, whence it is imported. It may be obtained for about three dollars a hundred pounds, and probably could be obtained for less in large quantities, as it is said to be very abundant in the earth over a large district. Its effects on grass, about one hundred pounds to the acre, are said to be good. From the

appearance and nature of the article I am inclined to the opinion that it may be used to some extent as a renovator of worn out soils.

Sulphate of lime, gypsum, selenite, or plaster of paris—Next to lime this the most important article among mineral manures. This salt is found in large beds or layers in different parts of the globe and particularly at Montmartre, near Paris, and at Nova Scotia, on this continent. That which is used as manure is not by any means a pure sulphate of lime, for it contains a large quantity of carbonic acid; it is therefore a mixture of calcareous sulphate and calcareous carbonate. The coloring matter is either from vegetables or iron. The properties of this salt are but little understood and not properly estimated. That so small a quantity as one bushel, or a little over one hundred pounds by weight, should when strewed over an acre of clover produce such surprising effects as to increase the crop two-fold is beyond common comprehension. But its effects are not confined to clover, although its use is nearly so. It has been tried in various species of vegetables with equally good effects.—The great error in using it is by putting on too small quantities. Another error is in putting it invariably on the surface instead of in the hill. The writer, last year, tried it on potatoes in the hill, with surprising advantage. The crop, with the exception of two rows was planted in the usual way, with a liberal supply of manure in the hill. Those two rows had no manure applied, but were planted by strewing plaster or gypsum on them pretty freely before they were covered with earth. They received the same kind of culture, and when they were dug in the fall were fully equal in size, weight and flavor to those planted with manure. These were Irish potatoes; but there is not a doubt that gypsum would be found equally beneficial on sweet potatoes. On corn and most garden vegetables it has been used in the same way with decided and unequivocal benefit. The corn crop of the writer was last year dressed on the hill, soon after it was planted with lime and plaster—three parts of the former to one of the latter—with very good effects. He will, this year, put it in the hill.

The quantity used to each hill was not more than half a gill—perhaps a little more would answer a better purpose. We have been informed by an intelligent farmer in an adjoining county, that he a few years ago, strewed gypsum over his field of corn, broadcast, about one bushel to the acre, with surprising advantage to the crop.

In Lancaster and York counties, Penn., it is a very common practice to strew gypsum over the wheat in the spring, say about the 1st April. We have never tried this, but intend to do so in a few days. It may be proper, however, to mention an objection which has some weight. A great deal of wheat in this section of country is injured, while it is soft and in a milky state, by rust. Gypsum is said to have the effect of keeping the wheat green, and thus of retarding its ripening in due time. The late harvest the more danger of rust as it is thought.

When we examine into the cause of what is called rust, we are compelled to admit that there is some considerable force in the argument. Rust in wheat occurs only in very wet seasons, with very warm close weather and fogs. The disease is occasioned by a bursting of the sap vessels, from repletion of moisture. This (the sap) exudes and dries on the stalk in form of a scale; indeed the straw is covered with a powder in some degree resembling the rust of iron; hence the name. The consequence is, that the supply of sap is cut off from the grain, while in the milk, and it perishes.

But whether the premises from which these conclusions are drawn be not erroneous admits of investigation; and as this can be best made by actual experiment, we shall make it the present season. Our farm is very small and may be considered as an experimental one; but small as it is we find we can make more clear than our neighbours who possess large farms of poor half cultivated fields. We have two lots of wheat of the same kind, white bearded winter wheat, (*tritium turgidum conicum album, aristiferum*) of about the same size and quality; we shall sow both with clover, and on one we will strew one bushel of gypsum to the acre; the result may be communicated hereafter to the public, for whose good our labours have been principally directed, as well in husbandry as professionally, all our life.

All seed grain should be washed or soaked before being sown or planted. The great advantage of washing seed wheat can only be known to those who have tried it. A large quantity of light wheat, chess, garlic and

other filth may thus be removed. No farmer should sow impure seed; he had better pay double price for that which is clean. Seed corn, and indeed nearly all seeds would be the better for being soaked and rolled in plaster before being sown or planted. Lime would answer nearly the same purpose, but it might be injurious to the hands. Brine, or pickle, moderately strong, should be used for washing wheat; as it is more buoyant and causes a greater number of worthless grains to swim on its surface. The benefit of rolling seed grain in gypsum will be apparent by the healthy and vigorous shoot which will be sent forth in the germinating process.

As we have ventured to advance our opinions on the *modus operandi* of lime, so we will again expose ourself to the shafts of criticism by offering our views on the action of gypsum. It is, at the most superficial glance, evident that some agents are concerned in the product, occasioned by the application of this salt to vegetables, beside the material itself. One bushel of gypsum applied to an acre of clover shall make a difference in the product equal to ten times the weight of the material applied. Whence comes this additional weight? Is it from the soil or atmosphere, or both? It is admitted by chemists that this salt undergoes very little alteration by the action of air, and that it is dissolved by about 500 times its weight of water. We have before observed that the plaster used for agricultural purposes is not a pure sulphate of lime, but that it is a mixture, &c. Now as this mixture is perfectly mild and bland, insipid and inodorous, and can never be dissolved in less than 500 times its weight of water, it forms an application wonderfully adapted to the growth of plants, and we may very readily conceive how an extraordinary increase of growth may be produced, without supposing a decomposition and new combinations necessary.

That pulverised gypsum has the power of absorbing moisture from the atmosphere has been proved by actual experiment. A certain quantity by weight, having been exposed a few days, shortly after having been ground, has been found by absorption to have increased to some extent; but not sufficiently to account for the phenomena noticed in its productive powers. The mild solution of gypsum is a peculiarly fit food for plants; as by its stimulant property it enables the plant more fully to develop itself, and draw such other supports to its aid as may be present in the soil or atmosphere.

From observing the surprising effects of gypsum in promoting the growth of vegetables, philosophers have racked their brains to account for it in a rational manner. That its principal action was by absorbing moisture from the atmosphere, has been the generally received opinion; but then a difficulty arose from the fact that gypsum is not a very absorbent substance. To make it so, Dr. Joseph Cloud of Chester County, Pa., has undertaken to account for its action in this way, by supposing that a decomposition and double elective attraction takes place before it can exert this influence on plants.

"It is a well established fact," says he, "that the action of sulphuric acid on vegetable and animal matter will cement them into sugar; the sap of all vegetables is probably saccharine, and it is in this state that disorganized matter is rendered most conducive to the promotion of vegetation. It is also well known that decomposing vegetable and animal matter, operated on by the atmosphere, will produce nitric acid, and we have thus the means of decomposing the sulphate of lime, inasmuch as axolate of lime will be formed, and the sulphuric acid set free to perform the beneficial effects that have been mentioned."

With due respect and submission to the learning and ingenuity of Dr. Cloud, we are in candor compelled to say that we cannot receive this explanation as being satisfactory. In the first place it is founded on the postulation, that the principal action of plaster is that of absorbing moisture from the atmosphere; secondly, upon the equally false premises, that plaster acts best in dry seasons; and thirdly, the reasoning is not supported by analogical facts.

Plaster has a slight attraction for moisture; but not much greater than quick-lime and many other substances. In proof of his assumption the Doctor adduces the fact that "vegetables which have been plastered are more wet with dew in the morning than the same species adjoining which have not been plastered." We think this the natural consequence of an increased growth of vegetation; and the density of the substance on which the dew is made more manifest to the senses. A pine board and a flat stone, placed side by side, shall each receive the same quantity of falling dew, yet the stone shall show double

the quantity that will be perceived on the board. Secondly, that plaster acts but in dry seasons is directly the reverse of fact. This error comes in as a matter of course to prop up the first. The last season was here remarkably wet; yet all the experiments of the writer with plaster were successful and highly gratifying. Plaster cannot be dissolved in less than 500 times its weight of water. A bushel is the common quantity applied to an acre, and this by weight is about 105 lbs., to dissolve which would require 53,000 lbs. of water, or 330 lbs. to a square rod, which would be about 41 gallons, and this quantity does not fall during the period of vegetation in a wet season. Thirdly—If the theory we have under consideration were correct, the soils richest in vegetable and animal matter, would shew the effects of plaster most sensibly, and those soils possessing neither could not in the least be benefited by it. Now this does not accord with fact and experience. They are sterile soils which show the effects of plaster most sensibly.

We hold that a decomposition of plaster, before it enters the plant, is no more necessary to its growth than a decomposition of sugar is necessary to the growth of an animal before it enters the stomach. True, plants have not stomachs; but they have functions adapted to the preparation of their food, and the power of elaborating their juices for the promotion of their growth.

To pursue our remarks further under this head, would perhaps be improper; but we may recur to the subject again when we come to speak of the rotation of crops.

There is another description of manure that cannot be considered as belonging to either of the kinds we have enumerated—This is *Compost*. It is not by storm that the farmer must expect to attain his object in the improvement of his land; but by patient industry and close economy—By constant attention to small savings, he will find, at the end of the year, that they amount to no inconsiderable sum.

Every farm should have a pit near the kitchen, about four feet deep, varying in size according to the resources of the farmer. In loose soils the bottom should be lined with clay, to prevent the loss of fluids which may be thrown therein. The sides may be laid up with logs, bricks or stone, according to fancy. Over a part of this may be erected a necessary with two compartments, one for the whites, the other for the blacks; and the remaining part covered with a good roof to prevent rain from falling into it. The gable end next the kitchen may be left open for the admission of leaves, straw chaff, and any coarse vegetable materials that may serve as a sponge to retain the liquids that may be thrown therein. Into this are to be thrown all the suds and refuse of the kitchen, sweepings of the house and yard, ashes, garbage of fish and such animals as may be killed upon the farm; in short every thing in the shape or substance of manure.—A barrel of lime should be placed near that some may be sprinkled over it occasionally, to correct any unpleasant smell, as it might otherwise endanger the health of the family. In this way an excellent compost may be formed, enough to cover several acres annually.

Having some doubts as to the advantage of hauling materials together, for the purpose of making compost heaps in the open air, as is practised by some, we shall not recommend it; for it appears to us as a loss of labor and materials. We think such materials as would make a valuable compost in the open air might as well be applied to the soil at once, where the gasses evolved might be absorbed by the soil.

We have now arrived at the last division of our subject,

On a Rotation of Crops.

In regard to the advantage to be derived from a rotation of crops, there are two theories. The first is, that the different kinds of plants require and receive from the earth different kinds of food for their support—that by continuing the same kind of crop for a number of years, the soil becomes exhausted of the peculiar nutriment adapted to the growth of that particular plant, while it retains other valuable properties suited to the production of other plants. The other theory is, that by the different construction of the roots of plants, some bind the soil, and leave it hard, while others leave it light and friable—that some plants draw their support more from the soil, others more from the atmosphere.

Each theory has arguments and advocates in its favour; but as the same conclusions follow—the propriety of a rotation of crops—little injury will ensue in adopting the wrong theory. For our part we think truth lies between

the two; and it may not be amiss to bestow a few remarks on the *physiology of plants*, to illustrate our opinion.

In support of the first, or theory for a specific nutriment, may be adduced the fact that *flax* will not grow perfectly twice on the same ground in two consecutive years—that in forest lands covered with a growth of any particular species of timber, which may be cut off or destroyed by fire, the same species rarely succeeds. This is known to be the case with the American fir, (*pinus canadensis*), which is commonly succeeded by beech, (*fagus*), or birch, (*betula*), or both. If there be any other arguments in support of the first theory, they are unknown to the writer; and we think too much stress has been laid on these.

We think the weight of evidence is in support of the other theory. That some plants derive their support mostly from the soil, while others receive it more from the atmosphere, is a fact acknowledged by all physiologists. Corn is one of the former kind, clover of the latter. That plants have but little choice, and receive whatever is presented to their absorbent radicles may be easily proved by experiment. We use salt for the destruction of the Canada Thistle, (*criscus avensis*) and other troublesome weeds. Asparagus is not injured by salt in moderate quantities; hence we use salt for the destruction of weeds and grass on beds of that excellent vegetable.

We observed that plants have not the power of choosing such things as may be present in the soil in which they grow, that may be salutary, and of refusing others that are pernicious. A fine thrifty locust tree, planted by the writer, grew and flourished ten years, when it was destroyed by a thoughtless boy, who poured brine near its roots. A willow planted near his spring-house, grew finely about the same length of time, and was then killed by soaking salt fish in the water near its roots.

That plants do not derive a specific nutriment from the soil may be inferred from the consideration, that all soils are composed of a few elementary principles; and that the virtues and qualities of plants are almost endless; that plants of opposite characters grow in the same soil side by side; that mint, sorrel and onion will grow in moss, if they receive a due supply of water, each possessing its peculiar property. Were it otherwise, plants would possess an intelligence beyond that possessed by animals; the absorbents of which will take up the most deadly poison as readily as the most salutary food.

It is probable that the great diversity in the sensible qualities of vegetables is more owing to the structure of the plant and its power of receiving, communicating and elaborating certain parts of the atmosphere, than from any particular food it receives from the earth.

Having said thus much on the physiology of plants, we proceed to some general remarks on a rotation of crops, and the advantages to be derived from such a system of husbandry.

In our division of the farm we recommended that the arable land should be divided into at least six fields; because by having this number the farmer will be enabled to keep his land longer in grass; and it must be borne in mind at the same time that our object is to *improve the soil*, and not to make money from it until we shall have accomplished that desirable object.

We commence with field No. 1, which we will suppose is in clover, and has been pastured the last year. This field is to have fifty bushels of lime, recently slacked, and while it is in a fine powder, spread upon it, from August to December, the earlier the better. After laying all winter, and after putting on all the manure you have to spare from the barn yard, &c., it is to be ploughed in March or April, by turning the sod fairly under. It is then to be harrowed the same way it was ploughed, so as not to disturb the sod. Lay it off in rows four feet six inches wide. Plant what is called drill corn to be worked all one way, three feet apart. First having put a gill of lime and plaster (gypsum) in each hill,* three-fourths lime, one-fourth gypsum. Leave two stalks to each hill. All the ploughing that the crop will require is to run one furrow on each side of every row to throw the earth from the corn. This may be done soon after it is fairly up three or four inches high. The principal object of this operation is to make the earth mellow near the corn that the roots may more readily penetrate it. Two good workings with the cultivator after this

* It may be put on the hill after the corn is up with good effect.

to keep down the weeds, and as many dressings with hoes simultaneously, is commonly all the work the crop will require. Sometimes it is found necessary to give it a third working after harvest; but in all this work the sod is not to be disturbed. It remains as a receptacle for the roots, which they will penetrate, and on which after it is decomposed they will feed. If this field was in fair condition before, the yield of corn in a good season will be from eight to ten barrels (40 or 50 bushels) per acre. The same field is to be sown with oats or barley the next spring, except a few acres for roots, about the first of April, without any manure. As soon as the oats or barley is off it should receive all the vegetable manure that can be mustered and ploughed, by turning the stubble and manure well under. Plough again a short time before sowing, which may be done from the 20th September to the 10th October, with wheat. The following March it is to be sowed with clover, among the wheat, six quarts to the acre. After the wheat is taken off, the clover should be left to grow, and not a hoof be permitted to tread upon it. The year following it may be cut for hay. This will bring us to the end of the third year from the time of beginning. The other fields in the mean time will year after year, and one every year, be treated in the same way. I should have mentioned that each field, the spring after it has been set in clover, should receive a dressing of one bushel of gypsum to the acre.

After the farm has received this treatment, field after field, the farmer may begin his regular routine of crops to *make money*, and keep up the fertility of the soil at the same time, by small dressings of lime and plaster; and by turning under crops of clover.

The system as it regards a rotation of crops, &c., is to be the same that we have laid down, with this exception: After five or six years, he is every year to flush up a field of clover by turning the crop under, called a clover-lay, which is to be put in wheat; thus giving him every year, one field in corn, one in oats, two in wheat, and two in clover, one of which for hay, the other for pasture.

By a due attention to saving manure, the fertility of the soil, after having been once established by lime, may be kept up for an indefinite period. But the farmer is never to sell a ton of hay. He must keep stock enough to eat all he can raise. If he have a good out-range for his cattle all the better; but let him, by giving them salt, and by other means, endeavor to get them in the yard every night. They will thus bring home and make for him through the summer, a large quantity of manure.

In our division of the farm we said it would be well to have three lots of about one acre each, near the house or barn. Two of these should always be kept in clover, and the other in rotation worked in roots, such as potatoes and the sugar-beet. Should it be desirable to work more land in roots, it may be done by appropriating a part of the oat field to that purpose; and they may be removed in time for sowing wheat.

The sugar beet will not be cultivated in this country to any considerable extent for the purpose of making sugar; but as food for milch cows, and fattening cattle, few articles of food will bear comparison with them. As to turnips, they are a very worthless vegetable, and not worth the trouble of cultivation. Six or eight bushels are as many as any farmer need care about raising. Potatoes, Irish potatoes—the kind known as *Mercers*, or *Gilkies*, as an article of food, for man or beast, are excellent.—They are far superior to any other kind known in this and probably in any other country. Let the farmer be satisfied with them as the *ne plus ultra*, in the way of potatoes. Tell not of your *Rohans*, your *Orange*, nor your *Pink-eye*—but give me the *Mercer* for a potato, and I will ask for but little bread.

By raising a few acres of roots, the farmer will be enabled to keep a larger stock of cattle; and thus improve and keep up the fertility of his land. And if he have a seventh field for a standing meadow, he may sell beef cattle beside his crop of wheat, and keep his land at the same time in a progressive state of improvement.

We said, when speaking of the action of plaster, and the physiology of plants that we might recur to it again under this head. That some plants derive their support mostly from the soil, while others receive it more from the atmosphere, is a point conceded by all accurate observers. Clover is one of the latter class in an eminent degree, which by its broad and expanded leaves is peculiarly fitted for this purpose. The writer has often observed that even when the clover has been pastured off close, the roots only have meliorated the soil. We are speak-

ing of the red clover; but there is another kind known by the name of French or Italian clover, (*trifolium incarnatum*), which is nearly allied to it in its valuable properties for improving the soil. One object for mentioning it is that it might grow farther South than the red clover. The writer has noticed large fields of sandy lands on the Eastern Shore of Maryland covered with it, of spontaneous growth.

White clover bears the same rank, in the estimation of the writer, among grasses that turnips do among roots—"a very worthless kind of thing"—I would never wish to see a spear of it on a farm of mine. It is a cursed vine that runs and takes root from Dan to Beersheba. It is a pest and intruder. We intend to serve it as others have served the Canada Thistle—salt it.

By letting the land rest in clover a few years, it regains its energies which may have been expended on other crops. Beside, the importance of shade to the soil, from the scorching rays of an almost vertical Sun is not duly estimated; and again, protection from cold in winter is not less important. Observe how the soil is improved in fertility, where a plank has lain a few years; even a flat stone, or any thing to protect it from excessive heat or cold.

We are admonished from the length of our essay that it is time to bring it to a close. If what we have said has been *well* said, it is enough. If otherwise, too much.—We have but a few words further to say by way of

Conclusion.

Agriculture is one of the most important occupations in which man can be employed. It was among the first commands that he received from his Maker to "replenish the earth and subdue it." Yet how lightly most men think of agriculture! To be a Physician, a Lawyer or Divine, requires years of assiduous study and anxious thought; to become even a mechanic requires time, application and experience; but a farmer may be made in a day! It is but very recently that any thing like an agricultural education has been thought of in this country; and even now few consider it of any importance. Agriculture is of itself a science, of as deep and abiding interest, of as much intricacy, and a thorough knowledge of which is as hard to be acquired and understood, as any of the sciences. It is of primary importance as affording food and raiment to the human family. It is the great hinge on which hang Commerce and Manufactures.

Had our forefathers properly estimated the importance of agricultural knowledge, we should not at this day have witnessed such a succession of useless, uncultivated and worn-out lands as are to be seen through most of the Southern States. What patrimony can a father leave his son equal to a correct agricultural education, connected with habits of industry and temperance formed by the father's precepts and examples!

Let us set about an improvement. A little labor and money skillfully applied, shall restore the lost energies of our barren wastes, and "make the wilderness blossom as the rose," while Ceres shall bless the labors of the husbandman, and smiling plenty fill his well-stored garner with the precious fruits of his industry.

THE FARMER'S ODE.

Let Commerce spread her flowing sails,
And Trade her gainful path pursue;
Without the Farmer what avails,
Or what without him can they do?
Let learned Divines and Lawyers boast,
Let Physic follow in their train,
The Farmer's skill is valued most
In making golden sheaves of grain.
Let Statesmen rack their brains with care,
Some mighty project to fulfil;
The farmer's wiser projects are
His flocks to feed, his grounds to till.
His orisons at early dawn,
To the Almighty Pow'r he makes,
Then treads the dew-bespangled lawn,
Or pleasure in light labor takes.
He hears the robin's early song,
And ruder notes of cheerful swains,
While heedful of his crops, along
He travels o'er his own domains.
A stranger he's to fretful care;
No busy schemes perplex his life,
Contented with his homely fare,
His children and a prudent wife.
He labors to improve his soil,
While Ceres shews him her regard,
And blesses all his careful toil,
In fruitful crops for his reward.

No prodigal nor careless waste

On his domain is ever found;

With open hand he yet will haste

To help the poor till they abound.

And now his earthly labour's past,

And old in virtue he has grown,

To crown his well-spent life at last

Kind heav'n shall claim him for its own.

H.

Postscript.

On looking over what we have written, we find that some things have been omitted, which we had intended to notice in the body of our essay. On the subject of grasses we neglected to mention the great value of *Lucerne*, either for hay or soiling; but more particularly the latter. In order to have the seed take well, the ground must be well prepared and manured, and the seed should be soaked a few hours in warm water, and then rolled in dry gypsum to separate it. Twenty pounds to the acre will be found enough, and it should be sown broadcast the beginning of May. It may be cut for soiling horses or cattle three or four times in a season, and the quantity that an acre will produce is truly astonishing.

We also forgot to speak against the pernicious practice of fall or winter ploughing, for a crop the spring ensuing. Rolling lands will suffer more injury from this practice than those that are level; but we object to it generally, as it leaves the naked soil exposed to the severity of frosts, to drying and driving winds, by which much of the strength and finer parts of the soil must "waste their fragrance on the desert air."

Few farmers appear properly to comprehend the process of evaporation; and the great loss that, not only soils, but manures suffer by it. We would recommend, at all times, as little exposure of the soil to hard frosts, hot suns and drying winds, as may be consistent with a due preparation of them for the different crops they are to receive and produce. A little reflection and attention on the part of the prudent husbandman will save him much, annually.

Connected with this subject is that of applying manures. A great diversity of opinion prevails as to the proper period of applying the barn-yard manure—whether in the spring, on the corn ground, or in the fall on the wheat. We have always been in the practice of getting it out in the Spring, on the corn ground, spreading it on the surface and ploughing it under with the sod; and we are persuaded that this is the proper time to apply it, as it would otherwise lose much of its essential qualities, by evaporation. Our cattle run in the commons, where they have a fine range, plenty of pasture and pure water, and we take great care to have them yarded every night. By these means, and from our compost pit, we have a pretty good supply of manure in the fall for our wheat crop.

On the subject of improving the soil by turning in green crops, such as buckwheat, tares, cow-peas, &c. we have said nothing, not having had much experience in that way; we are not, however, from our limited knowledge on the subject very friendly to it; for we think that where those would grow clover would grow also, and that answers our purpose well enough. We would prefer letting this be so ripe that the seed would vegetate; for we are of opinion that no very great advantage is to be derived from turning in unripe crops, full of watery sap; and before the saccharine principle is formed in the plant. If the cloverseed be ripe it will save the expense and trouble of sowing again the following spring; as it is always understood that a clover lay is intended for a wheat crop.

Marls.—We have unaccountably overlooked these valuable materials for manure, and think proper to say something concerning them here. Marls are mostly found near tide water. They abound from the Hudson to the gulf of Mexico, in the alluvial formation. They are of two kinds, argillaceous and siliceous, with carbonate of lime. In applying marl as a manure, attention should be paid to this circumstance; as the siliceous will be better for clayey soils, and so on the other hand, the argillaceous for sandy. The lime they contain is either from decayed shells, or from shells worn down by attrition. They are durable manures and should not be neglected when they can be obtained at a reasonable expense.

A new species of marl has been lately discovered in New Jersey, to which has been given the name of "green sand." Its valuable property as a manure is said to be carbonate of potash; but how any considerable quantity of this alkali should exist in the earth is hard to understand. We incline to the opinion, from the similarity in the chemical properties of the two articles, that that which has received the name of carbonate of potash, will on closer inspection, be found to be carbonate of soda. It is, however, of little consequence which it may be as it regards the value of the material for manure. They are both excellent manures. We have never seen the article, and therefore are not prepared to pass a decisive opinion as to the constituent parts of it. Our reasoning is altogether analogical in this case, and must be received as such.

When speaking on the subject of lime we neglected to say any thing of shell lime. This may often be obtained by farmers who are situated too remote from stone lime to use it as a manure.

Shell lime has been used by the writer, and he gives it as his opinion, that in strength it is nearly equal to slaked stone

lime. A good way of applying it, especially where negroes are depended on to do the labour, is to run the field off with a light plough in squares of 164 feet. This will give the number of square rods contained in an acre, 160. On each square spread one bushel or less of lime, without laying down in a heap. This is worth the trouble also in spreading stone lime, as the farmer will then know exactly how much he spreads on an acre.

We have endeavoured to be particular in our details; but there will still be much left to exercise the ingenuity and industry of the skillful husbandman; and if he be only half as much attached to his occupation as we are, he will always find pleasure in this laudable and honourable avocation. One essential part of the duty of the good husbandman is to keep a diary in which he is to enter, from day to day, all the proceedings as they transpire on the farm; such as the time at which he manured, ploughed and sowed, as well as the time he reaped and the product or the crop of a particular field. He should occasionally try experiments, note the time, manner and results; and if they be of utility, communicate them to some agricultural journal. We live for others as well as for ourselves; and if this sentiment were duly impressed on the mind of every farmer, a fund of information would be accumulated—as well for the guidance of the present generation as for the instruction of our children and succeeding generations. The lamentable ignorance of many who are nevertheless compelled by the force of circumstances, to follow the occupation of a farmer, is greatly to be deplored, and is one of the causes that has called forth our feeble exertions by way of remedy.

March, 1840.

The prior occupation of our columns, precludes the publication this week of an interesting communication on the subject of the "New Steam Boat Line" alluded to in a former No., and another from our respected friend "H." on the value of timothy. Both these writers evince talent and capacity to be useful to their brother farmers of no ordinary character, and it would be gratifying to us if they would frequently make our columns the medium through which to convey their views upon subjects connected with agriculture to the public.

THE GLANDERS.—The following communication we lay before our readers. We know not who the "old gentleman" is who gives the advice contained therein, but we can vouch for the "young" one who conveys it to us, that his endorsement of "good" authority would be sufficient for us. We feel a delicacy in tendering advice on so important a matter; yet we would remark, that if Mr. Mitchell should find his fears realized of the disease extending to his other horses, his own interest and that of his neighbors, should induce him to adopt summary measures to stay the contagion.

THE MOUND, Harford Co. Md., Feb. 5, 1841.

Samuel Sands, Esq.—Dear Sir—Yesterday after receiving the last No. of the American Farmer, having occasion to call upon an old gentleman of this neighborhood, as much skilled in all the "ills that horse-flesh is heir to," as any man in the country, and whose judgment in all things relating to the horse, I would consider as almost infallible, I put the paper into my pocket, for the purpose of showing him the letter which it contains from Mr. Mitchell to yourself. After perusing it, he observed, "This gentleman's horse has undoubtedly got the glanders, for I have seen them have both a healthy looking nostril, a slight cough, and eat as heartily as ever, when they had this disease, and inoculate a whole stable of horses, every one of which died with it before the horse which spread the infection. Therefore my advice would be for him to get rid of the horse he speaks of as soon as possible, as well as all others that have contracted the disease."

As regards myself, I am too young a farmer, and not sufficiently acquainted with the diseases of horses, to offer any advice to Mr. Mitchell other than this: If I was in his situation, having a horse whose symptoms of disease were such as he describes, and the gentleman mentioned above should advise me as above written, I would most certainly follow it.

Yours, very respectfully, JOHN CARROLL WALSH.

ROOT FEEDING.—A correspondent of the Farmer's Register in King William County, Va. says:—

Do urge on your readers the importance to them of going more largely into the root crop this year. I, together with several of my neighbors, cultivated last year several acres of them, sugar beet, mangel wurtzel, and ruta baga, and succeeded well. We all give the decided preference to the sugar beet as food for milch cows. The butter and milk are rich and fine, but we have not as yet made any accurate experiments in feeding them. My overseer brought a cow with him to my house about

Christmas, which he informs me was fed plentifully upon short corn and fodder all last fall and winter up to the time she came here, and since his removal, she has eaten nothing but about three perches of sugar beet per day, and the usual long food; and upon this feed has doubled, and more, the quantity of milk, besides a considerable improvement in quality. I feed once a day on steamed roots, and once on raw, and am not prepared to say which is best, as they are greedily eaten whether cooked or raw.

We are getting in a stock of the far famed Berkshire hogs hereabout, and are well satisfied with them as far as our acquaintance extends; I have owned a pair about eighteen months, and have readily sold all the pigs I could spare at good prices.

DISEASES OF HOGS AND SHEEP.—From a communication in the Farmer's Register from Z. Drummond of Amherst, Va. we select the following paragraphs on the diseases of hogs and sheep:—

To rid my hogs of lice, I cast ashes on them when they (the hogs) are wet. For mange, I use oil, or any kind of grease. For worms, I give ashes and charcoal; without precaution, my hogs of the old stock have sometimes been disgustingly wormy, but with their use not a worm is to be seen. Of late years I have no measles on my hogs, and I attribute its disappearance also to the use of ashes, of which the hog at intervals will freely eat, without compulsion. It is but very seldom that we have any malady amongst the hogs of this region, except those above mentioned.

It is complete folly for any one to attempt the raising of stock without attending to them, and particularly so as regards sheep. Clear them of ticks, lice, and worms, and no stock can equal them in profit. It is all-important that the flock should be attended daily through the summer season, particularly through the heat of day, for the purpose of keeping them in a clean shade, otherwise they will lie amongst their own filth, greatly to their detriment. In damp warm weather the sheep need salt; at other times I would not say they require it. Weeds are not proper food for sheep, for they scour; but the finer grasses and brouse are their natural food, consequently, most grateful and fattening. When confined, my flock have pine at will. I dock the tails of my sheep, and mark the ewes and wethers differently, so that at any time I can lay my hand on the wanted animal. Ewes that are well fed, will rarely disown their lambs, unless they have twins; nevertheless, as a precaution, as they are about to year, each, or two or three together, should be put into a cot until their lambs are a few days old, when they can tramp about and distinguish their mothers.

There are only two diseases common to sheep in this region, to wit: rot and worms. For the rot I know of no cure, and have to rely on books for preventives; nor do I believe that the rot is so common amongst us as imagined, for the worm in the head creates a distemper, the external appearance of which is very similar to the rot.

For the worm in the head I give tobacco snuff. By casting the snuff into a trough, and sprinkling salt thereon, the sheep in a scuffle, each for his share, inhale a portion into the nostrils and swallow the balance, which I am persuaded not only expels the worms in the head, but has a godly effect on the bowels. The grower of tobacco should never fail to put his sheep on the sucker field; for the experience of my life, and that of others, prove the practice to be highly beneficial.

I have, during my life, seen only two cases of reeling sickness, and never a case of either foot rot or pox, or any other disease to do a serious damage, besides those above specified.

Perhaps the greatest evil attending our sheep, is the tick, (or large louse,) besides which, they are sometimes troubled with the louse proper, which is very small. For the destruction of those vermin, I have used a compound of train oil and tar; but this, although effectual, is filthy to both man and beast. I have tried the Yankee plan, of plunging the sheep into a vat, or trough of soap suds, and find it use cheaper, more expeditious, and more effectual than the oil and tar. The proper time for this operation is at shearing. The lambs are then hardy, and before the clipped sheep is untied, immerse his whole body back-foremost in the suds. Economy will suggest the propriety of placing a large piece of bark (for which purpose poplar is best,) on the end of the trough or vat, for the purpose of casting back the drainage for further use.

When once a flock is clearly rid of those vermin, I sup-

pose it impossible that they can regain them, except suffered to mingle with a lousy race; consequently, economy would further suggest the propriety of destroying them *in toto* as soon as practicable. And furthermore, it would be proper to remember, when a sheep may be brought in from another flock, to have them thoroughly purged before his introduction. Finally, if an estray scrub should get into your flock, and you cannot quickly or conveniently get him out, shoot, and pay for him.

THE CULINARY GARDEN.

ON SITUATIONS FIT FOR KITCHEN-GARDENS.

In a great place, the kitchen-garden, considered merely as such, should be so situated as to be convenient, and, at the same time, be concealed from the house. It should be sheltered but should by no means be shaded, or be crowded. If walled round, it should be open and free on all sides, or at least to the south, east, and west, that the walls may be clothed with fruit trees on both sides. Round these walls should be a slip of ground and an outer fence, capable of keeping off cattle. This slip of ground should be at least twenty feet broad, in order to afford a sufficient border for the trees, and a walk; but it may be as much more in breadth as may be necessary to give ground, with that enclosed by walls, for the supply of the family; and it may be enlarged on all sides, or on any particular side, for that purpose.

The exposure should be towards the south, and the aspect at some point between south-east and south-west; the ground sloping to these points in an easy manner. If quite flat, it seldom can be laid sufficiently dry; and if very steep, it is worked under many disadvantages. It may have a fall, however, of a foot in twenty, without being very inconvenient; but a fall of a foot in thirty is most desirable, by which the ground is sufficiently elevated, yet not too much so. If there be no natural stream that can be conducted through it, water should be conveyed from the nearest river, lake, or pond; soft water being most desirable for the use of the garden.

Under other circumstances than the above-mentioned, and even in places of considerable extent, the Kitchen-Garden is often combined with the Shrubbery or Pleasure-Garden, and also planted nearer to the house. There can be no impropriety in this, provided it be kept in good order, and that the walls be screened by shrubbery, from the immediate view of the public rooms. Indeed, it has been found, that there is both comfort and economy in having the various gardens of a place combined, and placed at no great distance from the house. In stepping from the parlour to the shrubbery or flower-garden, thence to the orchard, and, lastly, to the culinary garden, there is a gradation both natural and pleasant. With such an arrangement, in cases where the aspect of the ground is answerable, and the surface, perhaps, is considerably varied, few faults will be found.

Sometimes we find the kitchen-garden placed immediately in front of the house, which we consider the most awkward situation of any; especially if placed near, and so that it cannot be properly screened by some sort of plantation. Generally speaking, the kitchen-garden should be placed in the rear, or on the flank of the house, by which the lawn may not be broken, and rendered unshapely, where it is required to be most complete. The necessary traffic with this garden, if placed in front, is always offensive.

Descending to the consideration of more humble gardens, circumstances are so often arbitrary with respect to their situations, as that they cannot be placed either so as to please, or give satisfaction by their products. These are cases where the kitchen-garden is necessarily thrust into a corner, and perhaps is shaded by buildings, or by tall trees, from the sun and air; where they are placed on steep hangs, in a northern aspect; and in all cases where the subsoil is a till or a cankering gravel, and the site cold and bleak.

Such situations as these are to be avoided, and should be considered among the worst possible. Next are open, unsheltered plains. But even there, if the soil be tolerably good, and the subsoil be not particularly bad, shelter may be reared, so as that in a few years the garden may produce a return for the expense laid out in its improvement.

With respect to the situation of market-gardens, those in the vicinity of great towns must have more regard to soil and to local conveniences, than those at a distance need to have, who can choose, perhaps, a free situation, and a better aspect; such as we find many of the village-

gardens, lying on sloping banks, by the sides of streams, that water and render them both pleasant and productive. He who has to pay a high rent should consider well, before putting down and improving a garden, whether the situation be eligible, the distance from town convenient, and such as to enable him to carry his goods to market on a footing with his neighbours.

ON SOILS, AND HOW TO IMPROVE THEM.

It is a happy circumstance, that in many instances, we meet with different soils in the same acre. In the same garden they should never be wanting; and where nature (or natural causes) has been deficient, recourse must be had to art, inasmuch as the variety of fruits and vegetables to be cultivated, require different soils to produce them in perfection.

It would be absurd, however, to imagine, that for every particular vegetable there is to be a particular soil prepared. The varieties of soil in any garden may, with propriety, be confined to the following: Strong clayey loam; light sandy loam, (which are the two grand objects); a composition of one-fourth strong, with three-fourths light loam; half strong and half light; and one-fourth light, and three-fourths strong. These, by a proper treatment, and with the proper application of manures, may be rendered productive of any of the known and commonly cultivated vegetables, in the highest degree of perfection.

But, in order to improve a soil, we must be guided much by its nature, so as, if possible, to render it serviceable in a general intention. And hence, our duty is, to endeavour to hit on that happy medium which suits the generality of esculents, in the formation or improvement of the soil in the kitchen-garden. Such a soil should be sufficiently tenacious to adhere to the roots of plants, though not so much so as to be binding, which would certainly retard their progress and extension in quest of food.

Hence a loam of a middle texture, rather inclining to sand, may be considered as the most suitable soil for the purpose here in view, and that on a double account, viz. The greater part of the valuable kinds of kitchen vegetables delight in such soil, and it is worked at less expense than a stiff one; neither in severe droughts is it apt to crack, or be parched, nor in hard frosts is it so apt to throw out tender plants or seeds.

If soils be too strong, the tender roots of plants push weakly in them, sicken, canker, and perish; and if a soil be too light, and if it be poor withal, plants deposited in it will push their roots far, and in vain, in quest of that stability and nutriment which is necessary and essential to their support. So that, if the butt of our aim be perfection in the production of wholesome and well-manured vegetables, we must put aside careless indifference in the formation of a proper soil, nor trust entirely to the force of dungs, were they even to be had in the greatest plenty; for dungs, by too free an application, have an effect on the quality of esculents not altogether salutary.

Wherefore, that our efforts may be attended with success, let us bestow a moderate and prudent expense in the first outset, on composing or so improving the soil to be appropriated to this purpose, as that in our best judgment, it may fully answer the intention.

In many cases, the soil of the garden might be improved, in a very considerable degree, at a small expense. Thus, where the bottom is wet, and the subsoil of a cankering nature,—by judicious draining, which is certainly one of the greatest improvements in this case; where the soil is stubborn,—by the addition of small gravel, sea-sand, wherein is a considerable quantity of small pebbles and shells, coal-ashes, lime-gravel, pounded brick-bats, brick-kiln ashes, &c. and, above all, by being carefully laid up in ridges in the winter months, and indeed at all times when not in crop, in such a manner as to give the greatest extent of surface for the weather to act upon; where the soil is a poor sand or gravel,—by the addition of clay, or strong clayey loam, scourings of ditches which run through a clayey subsoil, pond-mud in a like situation, or scrapings of roads which lie in a clayey district, &c.

Soils that abound with metallic substances, and which generally make them appear of an iron colour, are termed *fox-bent* or *till*. These substances are often found to be intimately mixed, or rather consolidated with the soil, in considerable masses, which are adhesive and very ponderous, (the Meadow Iron-ore of mineralogists.) Such soils are the most unfavorable to vegetation of any; and are quite ineligible for the purpose here in view, without being

much improved. For this purpose, lime will be found the most serviceable of all things, if judiciously applied, and the soil be frequently turned over by digging or trenching; so as that the soil and the lime may be intimately mixed together, and that the atmosphere may have full effect upon them; for without this, the lime will not operate so effectually, nor will the tilly particles of the soil be divided or be meliorated so well.

It may seem unnecessary to observe, that according to the quantity of iron matter contained in the soil, lime will be required to reduce it. In order to ascertain this quantity, a magnet will be found useful; and, by one of the masses being calcined, and then reduced to a powder, will separate the iron particles from the soil or residuum, showing the proportion of iron, and of earth. Thus we may judge what quantity of lime will be required to fertilize the soil; taking for the extremes in ordinary cases, and supposing the lime of a middling quality, 150 and 400 Winchester bushels an acre; applying the lime in a quick or powdered state, and properly working the soil; being careful, in the first place, to drain it of superabundant moisture.

Ridging up of land, as above hinted at, has the happiest effect, especially for stiff soils, and should never be omitted when the ground is not under crop. In dead sandy loams also, and in cankering gravels, it is of incalculable advantage, and greatly meliorates them. For it is a fact proved by experience, that, exposing soil to the sun's rays in part, by throwing it into a heap, whereby it is also partly shaded, and trenching it once a-month, or in two months, will sooner restore it to fertility than any other process, exclusively of adding fresh matter.

And thus, if any ingredient, noxious to vegetation, abound in the soil, it may be expelled, or be exhaled by the action of the atmosphere; more particularly if the soil undergo a summer, and also a winter fallow. In the latter case, however, care should be taken to have the surface incrustured by frost, as often as possible, by turning it, and giving it new surface each succeeding thaw.

That kitchen vegetables do best on what is termed *new land*, is a generally received opinion, and is plainly demonstrated in many instances. It is also a common complaint among gardeners, that their ground, by being, as it is termed, *worn out*, will not produce certain kinds of vegetables; that it is poor and hungry, or altogether unfitted to the production of them, having perhaps formerly produced the very articles in great abundance; but that the surface has been many years under these crops, and that they have not a sufficient quantity of ground for a proper change. In *walled* gardens this complaint is most general; and it would appear to be occasioned by the expense of enclosing a sufficient quantity of ground to serve the family, or of composing a body of soil of a competent depth.

That many kinds of kitchen vegetables do as well (if not better) in an open field garden, as in one that is enclosed by high walls, and sheltered, and perhaps shaded with trees, is an undeniable fact; and were it not for the production of the finer fruits, there would be little use in rearing garden walls at all. But the ground thus enclosed is certainly occupied with greater propriety in the production of culinary vegetables, than of any other crop.

As it is presumed the ground thus enclosed is to be occupied as a garden for many years; that the walls have been built at a considerable expense; that the ground has been trenched; walks made and laid out at a considerable expense also; and that, above all, it is desirable to have a supply of wholesome vegetables for the use of the kitchen, while the ground is thus occupied; we shall drop a few hints on the method to be pursued, which has been practised with success.

First, then, it is necessary to have a depth of soil from twenty-four to thirty-six inches; which, in many instances, is not attainable without much expense and labour. If the above object be kept in view, however, this ought to be a secondary consideration; as it requires but once doing, and the matter of from 10 to 20 per cent. on the expense of the garden, will, in most cases, be sufficient for its accomplishment. In this case, it is obvious, that whatever the depth of the natural soil lacks of twenty-four inches, is to be supplied by *forcing*, that is, carrying in soil from the adjacent fields; for it is not advisable to trench up and mix much of the subsoil (of whatever texture it be) with it. Indeed, in many cases, gardens are almost ruined by the injudicious admixture of the subsoil with the surface-mound. The method is this:

To take three crops off the first surface, and then trench *three spit deep*, by which the bottom and top are reversed, and the middle remains in the middle. Take three crops off this surface, and then trench *two spit*; by which the top becomes the middle, and the middle the top. And take also three crops off this surface, and then *three spit*; whereby, that which was last the middle, and now top, becomes the bottom; and that which is now the bottom, and was the surface at first, now becomes surface again, after having rested six years. Proceed in this manner alternately: the one time trenching two spit deep, and the other three; by which means the surface will always be changed, and will rest six years, and produce three.

Hence there will always be *new soil* in the garden for the production of wholesome vegetables; and hence also will much less manure be required, than when the soil is shallow, and the same surface constantly in crop.

We have said above, that the soil should be from twenty-four to thirty-six inches deep: we would not advise that it be much more, or, at least, that it be trenched to a greater depth; as thereby the surface might be buried too deep from the action of the weather and influence of the sun, and consequently would be crude and unmeliorated for some time after trenching up.

In situations where the soil is only so deep as to allow of trenching two spit, and where expense in making it deeper may be grudged, the above hint may also be followed with advantage, as by regularly trenching every third or fourth year, the ground will rest half its time; and if judiciously managed, and cropped in proper rotation, wholesome vegetables may be produced on it for many years successively.

In many instances it may be inconvenient, nay improper, to trench the whole garden over in the same season; nor do we wish to advance such a proposition: one half, or a third part at a time, may be more advisable, and also more convenient; of which, however, circumstances alone can determine. But we would here observe, that, in cases where the bottom is wet or tilly, in trenching at any time, care should be taken to go exactly the same depth with each trench; a matter of evident benefit; for if the bottom be left rough and uneven, and if galls be left between the trenches, water will stagnate in the soil, and of course by *souring* it, will injure the crop.

FEBRUARY—Concluded.

Leeks.—A few, for the first plantation, may be sown in a bed or beds along with the onions (as noticed below), only considerably thicker. The principal crop should not be sown till March; which see.

Onions.—About the latter end of the month is a proper time to sow a full crop of onions, in land of a middling texture. If heavy and wet, the sowing had better be deferred till next month, or till the first of April. There are several sorts of onions, viz. the Strasburgh, Deptford, Portugal, or Spanish, red-skinned, silver-skinned, &c. Any of these may be sown at this time, but the two first (which are indeed said to be one and the same), generally produce the best crops, and are certainly the best keepers. I have, however, often seen very abundant crops of the silver kind.

The land should be well broken in the digging. If it have been manured for the old crop, and be in good heart, so much the better; but otherwise it will require to be dunged. In this case, a compost of stable-dung, cow-dung, and earth, is to be preferred to any simple dung.

At any rate, new, rank stable-dung is improper, especially for light soils. Neither dig nor sow if the ground be not in a comfortably dry state, otherwise the seeds will not rise freely. Sow either in four-foot beds, thinly, and cover to the thickness of a quarter of an inch; or in shallow drills, eight or nine inches apart, also thinly. Rake all smooth, but tread none in either case.

The winter-crop of onions should be gone over about the end of the month, be cleaned from weeds, and be thinned if needful; and let the surface be well stirred up among the plants. If green onions be in demand for the use of the kitchen, they need not be much thinned out at this time; but rather delay the final thinning till April or May. Of which see further in these months.

Parsley may again be sown for raising successional crops, in cases where young parsley is in demand; and the Hamburg sort for stewing, may now be sown, if not sown last month, which see, for directions.

Peas.—A full crop of Charltons may be sown at the beginning, and of Marrowfats at the end of the month; choosing an open situation for either. For the manner of

sowing, distance, &c. see January; only observe to allow marrowfats, rouncival, and all the large kinds, six inches more between the rows, and sow them thinner than the Charlton or blue Prussian sorts. There are many kinds of peas, any of which may now be sown, according to fancy; but observe that the Charlton, dwarf marrow, and Prussian sorts, are most productive; also fittest for small gardens, on account of their requiring less room than the larger kinds.

Stir the surface about the early crops that have risen, and earth up those farthest advanced in the manner above directed for beans; which also repeat at the end of the month, choosing a dry day for the operation.

Shallots may still be planted, if not already done, and the sooner now the better. See last month for full directions.

Spinage, of the round sort, may be sown on an open spot at the beginning, and also for successional crops at the end of the month; of which see January.

Lettuce may again be sown, for crops to succeed those sown last month; in the first week of the month, in a sheltered situation; and in the last week, in an open spot. For the manner of sowing, and of the kinds, see January.

Now also thin the crops of winter lettuce; hoe and stir the ground among the plants (whether it be clear from weeds or not), which will greatly encourage their growth. The plants may be thinned out by degrees, and as they are wanted for use; but if it be wished to have them grow to full size, they should finally be thinned out to nine or ten inches apart.

Radish may now be sown in an open situation, either singly, or among other crops, as hinted at last month, which see. For a constant supply of young radishes, sow every ten or twelve days. Observe to sow the turnip-rooted kinds thinner than the short top or salmon; but none should be sown very thick, as they are in that case apt to run too much to tops, and get sticky at roots.

Small sallading, that is, chervil, cress, and mustard, may now be sown on an early border, either in beds or in rows; but by being sown in rows, they are more easily gathered. Drill half an inch deep, and six or eight inches asunder; and sow thickly. Sow every eight, ten, or twelve days, according to the state of the weather, and the demand for these sallads. A small bit of each at a time will be sufficient to answer an ordinary demand. A drill of each kind, ten yards in length, will give a large supply, the sowing being repeated once a-week.

ANOTHER SUSPENSION.—The U. S. Bank at Philadelphia, having been compelled in consequence of the gathering up and presenting of her liabilities in immense amounts, to suspend specie payments on Friday last, the other banks of that city generally, and those of Delaware, and on Monday, the banks of this city, also suspended.

BALTIMORE MARKET.

Cattle.—On Monday the sales of Beef Cattle at the drove yards were small in consequence of the inclemency of the weather. Of 230 head that were offered on that day about 100 were sold. On Thursday 150 head were offered, nearly all of which were sold at prices ranging from \$6.25 for good to \$7.50 for prime quality. Some small inferior lots were sold in the early part of the week at \$5.50 to \$6. Live Hogs are in fair supply and are selling at \$6 per 100 lbs.

Cotton.—There has been an unusually active demand for Cotton this week, and nearly if not quite all in market has been taken by the spinners. The sales comprise between 900 and 1000 bales at 11 to 12 cents, principally good Georgia and Mobile at 11½ cents and New Orleans, not prime, at 11¼ a 11½ cents.

Cloverseed.—Sales of prime seed at \$5 per bushel. We quote fair to prime at \$4.50 a \$5; and strictly prime at \$5.12½.

Molasses.—We note sales of New Orleans in bbls. at 28 cts. Two cargoes of Cuba, comprising 260 hhd. were sold this week on terms not transpired.

Pork.—Some small parcels of killed Hogs still reach the market, and we note sales this week at \$5.25 to \$5.95 for those of prime quality suitable for family use.

Sugars.—There have been no auction sales of Sugar this week, and we hear of no transactions at private sale.

Tobacco.—The market continues very quiet, the smallness of the stock offering no inducements to purchasers. A few trifling lots of Maryland were sold within the range of our quotations, which we continue, viz., inferior and common \$4 a \$5.50; middling to good \$5.50 a \$7.50; good, \$8 a \$8.50; and fine \$9 a \$13. An occasional hoghead of Ohio is taken at prices agreeing with former rates, viz. inferior and common

at \$4 a \$4.50; middling \$5; Good \$5.50 a \$6.50; fine red and wrapery \$8 a \$12; prime yellow at \$7.50 a \$10; and extra wrapery \$15 a 17. The inspections of the week comprise 9 hhd. Maryland, 7 hhd. Ohio, 10 hhd. Virginia, and 34 hhd. Kentucky—total 60 hhd.

Flour.—The market for Howard Street Flour is rather firmer to-day than at the close of last week, but without any advance in price. We note sales of several hundred barrels good common brands from stores this morning at \$4.50. The receipt price continues at \$4.37½.

We hear of no sales of City Mills Flour, which is held at \$4.62½.

Grain.—Good red Wheats would command about 90 cts. Sales of white Corn, aflont, at 45 cts. and of yellow at 45½ cts. Sales of Md. Oats this morning at 31 cts.

Flaxseed.—We note limited sales from stores at \$1.18½. The wagon price continues at \$1 per bushel.

Provisions.—On Saturday and to-day considerable transactions took place in barrel meats and also in Bacon, among which we note about 350 barrels new Mess Pork at \$15; 200 barrels new Mess Beef at \$12.50 cash; 75,000 lbs new Baltimore cured Sides Bacon at 8 cents, and 5000 lbs Hams of the same description at 10 cents. We are advised of sales also of No. 1 Beef at \$10.50 on 4 mos. In Western or Country cured Bacon we have heard of no transactions. New Western assorted is held at 7½ cents and Country cured at about the same price. The stock of all descriptions continues very heavy. We have not heard of any sales of Lard to-day. The last transactions in Western No. 1 were at 8 cents on time.—The demand for Butter is confined to retail lots and we continue to quote Glades No. 1 at 18 to 21 cents, No. 2 at 14 to 18 cents and No. 3 at 8 to 12 cents according to quality.

Mobile, Jan. 30.—Cotton—The transactions for the week are 19,000 bales. The market closing firmly at an advance on the finer descriptions of 4 to 4c, and on those below fair of 4 to 4c above last quotations. We are advised of one sale of choice cotton at 11½c. and there are some held in the market since the arrival of the late news at 12c.

Cincinnati, Feb. 4.—The river has risen about six feet within the last twenty-four hours, and is already higher than it has been any time since last spring. There is probably from twenty-five to thirty feet in the channel between this city and Louisville. Lard is in fair demand at 6½c; we heard of a sale of 1000 kegs last Saturday at 6c, and of another of 500 kegs Monday, city rendered, at 6½c. Hogs continue to come in, and have advanced 12½c per cwt. the past week. Two or three droves, amounting to 1500 head, arrived yesterday from Indiana and Ohio; we quote those of 200 lbs and over at \$3.50, and those under at \$3.25 per cwt.

New Orleans, Jan. 27.—Business for the last three days has been somewhat extensive, and in the staple article of the South the transactions have been large, and at improved rates. The news of advanced prices and ready sales of Cotton in Liverpool, has had the effect of raising prices here—accordingly I find nearly 15,000 bales have changed hands since Saturday at improved prices. Liverpool Classification.—Ordinary 8a8½; middling 8½a9½; middling fair 9½a9½; fair 10a 10½; good fair 10½a11½; good and fine, 12½. The stock of Tobacco continues accumulating, but the high prices demanded by holders occasion great inactivity. The transactions for the last three days embrace about 70 hhd.—of which 33 Firsts at 9½c. and 35 hhd. Seconds at 7½. The sales of Sugar embrace 650 hhd. at former prices which are well supported. Molasses is somewhat scarce and readily commands 21c on the Levee. A sale of 24,000 galls. on plantation at 16c. Flour has slightly improved in consequence of the favorable accounts from England. Superfine now sells freely at \$4.24. In Pork, Beef and Bacon no change to note. The market is depressed to the lowest possible stage.

New York Market, Feb. 6.—The sales of Cotton are 700 bales this morning. Genesee Flour is offered freely at \$4.88. No sales of Grain. The decline in Hides is 4 or 5 cts. from the top price. The stock of Cotton in this market must be about 25,000 bales, of which 15,000 are offered for sale; the rest the owners will do with as circumstances render advisable. We quote Liverpool fair Uplands 11½a11½; do, Orleans and Mobile 11½c. U. S. Bank Stock closed at 37. The bills are selling at 9a12 disc. In domestic exchanges there is a great uncertainty, and very few transactions. On Philadelphia the rates are 4a9 disc. depending on the bank where the funds are.

Philadelphia Market, Feb. 5.—Flour and Meal—Flour is rather on the decline; in Broad street it has been freely offered at \$4.62½; but on the Delaware the factors generally are firm at \$4.75 per bbl. with very light stocks. Grain—Sales of Wheat 90a95c; Rye 53½. Sugars—The principal transactions have been in New Orleans at 6½a7½c; sales white St. Jago box at 9½c.

At Alexandria, on Friday, Flour \$4.25 from wagons, and \$4.37½ from stores, Wheat 90a95c; Rye 50c; Corn 46a50c; Oats 28a33.

At Georgetown, D. C., on Friday, Flour was \$4.37½ a \$4.43½ from wagons.

At Nashville, (Tenn.) on the 27th inst., the river continued in fine navigable order. Cotton in brisk demand at 7½a8c. The extremes for Tobacco were 2½a5 cts. Corn shelled, 20a 22c bu. Sugar 6½a7c—and the market well supplied.

POTATO AND MOUNTAIN SEED OATS.

The subscriber offers for sale each of these varieties of Oats, at \$1 per bushel—Also, the celebrated GENESEE RASPBERRY PLANTS, \$2 per dozen, or \$12 per 100. f 10 S. SANDS.

NEW-FOUNDLAND DOGS.

For sale, a very fine New-Foundland Stag, about 1 year old, at \$30—also her three male pups, 3 months old, \$10 each. Apply to f 10 S. SANDS, Farmer Office.

BREEDING SOWS.

The subscriber will have for sale in a few weeks, some fine full bred Black spotted BERKSHIRE BREEDING SOWS, from 8 to 18 months old, of the best blood.

For sale, a half Chester and half Berkshire Sow, 1 year old, in pig with her second litter, by a superior Berkshire boar—price \$20. Also, a half Berkshire and half China Sow, sire and dam both imported, 1 year old last Sept. in pig by a celebrated Berkshire boar, and a very fine breeder—price \$30.

2 Boars and 4 Sows, 8 to 12 weeks old, by a superior Barnitz boar out of a neat long English sow, both white—They are very promising animals—price for a Boar and 2 Sows, 15 dols.

3 BAKEWELL RAMS FOR SALE,

1 to 2 years old, very superior full bred animals, price \$45 each. f 10 S. SANDS.

ENGLISH GOOSEBERRY PLANTS.

The subscriber has received by the ship Powhatan, about 500 best PREMIUM GOOSEBERRY PLANTS, assorted, green, red and white, which according to Lindley, has taken the most and highest premiums at the different fairs.

On hand as usual, FRUIT TREES—ORNAMENTAL TREES suitable to plant in streets, of sorts, 10 to 15 ft. Laburnum, Mountain Ash, Balsam Fir, Weymouth Pine, Arborvitae, Tree and dwarf Box, English Yew, Ornamental Shrubs a large assortment, Perpetual white, and bluish Moss, and other Chinese and hardy Roses, all strong well established plants, especially the Evergreens, 1 to 6 feet, Grape Plants and Cuttings of sorts, two years old white Dutch Asparagus, Horse Radish, Rhubarb, and Hop Roots—Raspberry, Strawberry and Currant Plants of sorts, for sale at his usual moderate prices. See printed and priced Catalogues, to be had gratis by mail of the subscriber, or of R. Sinclair, Jr. & Co. Baltimore, who will also receive orders for this establishment when more convenient to customers. ROBT. SINCLAIR, f 10 31 Clairmont Nursery, near Baltimore, Md.

HUSSEY'S REAPING MACHINE.

The subscriber continues to manufacture his Reaping Machine in Baltimore. He has been enabled by the experience of another year to make several important improvements, which will add greatly to its durability, and render it still more manageable in the hands of inexperienced persons.

Those persons who intend to procure machines for the next harvest, are requested to apply early, as the supply will be limited to the probable demand. The demand at the last harvest, as at the harvest previous, could not be supplied, although the manufacture had been more than doubled. The same reasons which operated to limit the supply last year (the uncertainty of the crop) still operate—yet from the settled conviction of the great utility of the machine, which very generally prevail amongst the farmers of Maryland, where the machine is best known, an increased number will be made this year. The machine is warranted to equal the highest recommendations which has ever been given to it with any shadow of reason.

He has also resumed the manufacture of his highly approved Corn Sheller and Husking machine, which had been for a time relinquished to other hands. Its merits are too well known in Maryland to need a remark farther than to say, that those now made by the subscriber are greatly improved with a cylinder presenting a solid iron surface instead of segments, besides several important additions. He has also lately constructed an implement on a new plan to cut beets and turnips for cattle feed, with the necessary despatch—price \$10. OBED HUSSEY, f 10 11

DURHAM CALVES.

Farmers, and others, wishing to procure the above valuable breed of cattle, at moderate prices, can be supplied at all seasons of the year, with calves of mixed blood, from dams that are good milkers, by applying any day, Sun days excepted, at

Chesnut Hill Farm,

three miles from the city, on the York Turnpike Road, and near the first toll-gate. PETER BLATCHLEY, Manager. April 29, 1840—1 y.

CATTLE, HOGS, SHEEP, &c.

The subscriber offers for sale the following STOCK, viz.

DURHAMS:

- 1 BULL, imported, about 5 years old—price \$400.
- 1 do out of imported stock, about 2 years old—\$300.
- 1 do 5 to 6 years old, \$160.
- 1 do 3 years old, \$175.
- 1 do 15 months old, \$110.
- 1 COW, imported, in calf by an imported bull, 5 years old, \$400.
- 1 HEIFER, 15 months old, out of imported stock, \$250.
- 1 do 6 months old, do do \$150.
- Several Yearlings, bulls and heifers, \$110.
- Do Spring Calves, do do \$55.

Pedigrees and other particulars furnished on application to S. Sands. LORD ALTHORP, Jr. 4 years old in July, sired by the imported bull Lord Althorp, who was raised by the celebrated Earl Spencer, and owned by Gen. Watson, now of Louisville, Ky.; he is out of Eliza, a full bred cow, a first rate milker—full pedigree will be furnished—price deliverable in this city, 350 dols. D. VONS.

Very superior BULL CALF, 5 to 6 months old, \$75. Several COWS, 5 to 7 years old, \$75, very fine stock. j 13 S. SANDS, publisher American Farmer.

GOLDSBOROUGH'S PATENT CORN HUSKING AND SHELLING MACHINE.

ROBT. SINCLAIR, Jr. & Co., No. 60 Light street, have bargained with Col. Goldsborough, and are now prepared to supply any number of the above machines, which, for strength, simplicity, power and effect, are unequalled in this country. The first machine of this description was invented and made by Col. N. Goldsborough, of Eastern Shore, Md. This gentleman has recently effected important improvements on his machine, and has succeeded in securing a patent for his valuable invention. The recent experiments near this city and on the Eastern Shore of Md. have fully tested their great power. They are capable of husking and shelling about 700 bushels of corn per day, or shelling after the husk has been taken off 1200 bushels. A boy (with a common wooden rake) will separate the husk and cob from the corn as fast as it is discharged from the machine.

They occupy a space of about four by six feet—constructed similar to a threshing machine with horizontal spring beds. The cylinder is studded with wrought iron knobs or short spikes, and partially rests on a concave bed made of round fluted rollers which revolve as the corn passes through, and greatly facilitates the work and reduces the friction. The operating part of this machine being made exclusively of wrought iron and strong oak timbers enables us to rank them among our most substantial machines. The above machines require the power of two strong horses to give them the proper speed.

Machines on the same principle can also be furnished to be worked by manual (two men) power, which will perform with about half the rapidity of the horse machines. Either of the above will be furnished at the low price of \$35.

ALSO FOR SALE, AGRICULTURAL and GARDENING IMPLEMENTS of every useful description. GARDEN, FIELD and FLOWER SEEDS, a large and superior assortment. f 3.

BERKSHIRE AND IMPROVED ULSTER PIGS.

The subscriber will receive orders for his spring litters of pure Berkshire Pigs, bred from the stock of Mr. C. N. Bement, and Mr. John Lo-sing, of Albany, N. Y. and importations from England. Also for improved Ulster Pigs, bred from the celebrated stock of Mr. Murdock, of Ireland. Also for crosses of Berkshire and Ulster, and the black and white Berkshire Address

JOHN P. E. STANLEY, Baltimore, Md.

On hand, ready for delivery, a few pairs of Berkshires, black or white—price \$20 to \$25, according to age. dc 23

LIME—LIME.

The subscribers are prepared to furnish any quantity of Oyster Shell or Stone Lime of a very superior quality at short notice at their Kilns at Spring Garden, near the foot of Eutaw street. Baltimore, and upon as good terms as can be had at any other establishment in the State.

They invite the attention of farmers and those interested in the use of the article, and would be pleased to communicate any information either verbally or by letter. The Kilns being situated immediately upon the water, vessels can be loaded very expeditiously. N.B. Wood received in payment at market price. ap 22, 3m E. J. COOPER & Co.

BERKSHIRE PIGS.

One of the subscribers having recently spent nine days in Albany and its vicinity, has succeeded (by the aid of J. Lossing and Z. Standish, esq.) in securing some of the best bred Berkshire stock in the State of New York; also the noble and most beautiful animal, the full bred Berkshire boar, PRINCE ALBERT, imported in 1839 by Mr. Joseph Berry, an English gentleman, for his own use—bred by C. & W. Bush, Esqrs., Berkshire, England—being the male of the two imported pigs specially noticed by Mr. John Lossing in his communication published in the May No 7th vol. of the Albany Cultivator—all of which, together with their former stock, except the imported male, are from the stock of Judge Spencer, Mr. Lossing, and Mr. Wells, of Albany, N. Y.

The subscribers, from the attention they purpose to give to the breeding of pigs from their valuable stock, and being determined not to send either rams or culls from their piggery, flatter themselves that they will be able to furnish pigs as well bred and in as fine condition as can be produced from any other piggery in this country.

Having disposed of all our fall pigs, we will continue to receive orders for our spring litters of pure Berkshire pigs, ready for delivery from the 1st of June to the middle of July, 1841, from our valuable stock of breeders (for particulars of which see former advertisement.) Price at their piggery \$20 per pair; cooped and delivered in the City of Baltimore, or shipped at the port of Baltimore, \$25 per pair. Also for half bloods out of good country sows, by Prince Albert. Price at their piggery \$8 per pair; cooped and delivered in, or shipped at the port of Baltimore, \$10 per pair.

All communications post paid will meet with prompt attention according to date. Address THOS. T. GORSUCH

and EDWD. GORSUCH,

Hagerford, Baltimore Co. Md.

PRINCE ALBERT will serve blooded Sows at \$11 each, and common do. at \$6—they will be received and delivered at Watkins Tavern, corner of High and Hillen sts. f 4

LIME, LIME.

The subscribers inform the public that they are now prepared to receive orders for any reasonable quantity of first quality Oyster Shell Lime, deliverable at their kilns on the farm of Capt. John C. Jones, Lower Cedar Point, or on any of the navigable waters of the Potomac, on very accommodating terms. Having been engaged for the last two years in the Lime burning business entirely for Agricultural purposes in Pennsylvania, we would not think it necessary to say one word in favor of it as a manure, within its limits, it being well established; but being now located where perhaps it may be called by some an experiment, we refer to the Reports of Mr. Dacot, Geologist for this state, to the Legislature.

DOWNING & WOOD, Cedar Point, Milton Hill P. O.

ja 13 6m Charles Co. Md.

JOHN T. DURDING, Agricultural Implement Manufacturer, Grant and Ellicott street, near Pratt st. in the rear of Messrs. Dismore & Kyle's, Baltimore.

Anxious to render satisfaction to his friends and the public, has prepared a stock of implements in his line, manufactured by experienced workmen, with materials selected with care; among them, Rice's improved Wheat Fan, said to be the best in use, and highly approved of at the recent Fair at Ellicott's Mills, \$25
Straw Cutters, from \$5 to 20
Corn Shellers, hand or horse power, 13 to 25
Thrashing Machines with horse powers, warranted, and well attended in putting up, \$150
Corn and Cob Mills, new pattern.

The Wiley Plough, Beach's do. Chanoweth's do, New York do, self sharpening do, hill-side do of 2 sizes, left hand Ploughs of various sizes, Harrows, hinge or plain; Cultivators, expanding or plain, 4 sizes; Wheat Cradles, Grass Scythes hung, &c.

Castings for machinery or ploughs, wholesale or retail; Haines' Singletrees, and a general assortment of Tools for farm or garden purposes, all of which will be sold on the most pleasing terms to suit purchasers. or 14

AGRICULTURAL IMPLEMENTS.

The subscriber, referring to former advertisements for particulars, offers the following valuable implements to the farmers and planters of the United States:

A MACHINE for boring holes in the ground for posts, price \$5
A MACHINE for morticing posts, sharpening rails for fence, for sawing wood in the forests, and planing boards, &c. 150

A HORSE POWER on the plan of the original stationary power; the castings of this machine weigh 850 lbs. 130

The above is of sufficient strength for 6 or 8 horses; one for 2 or 4 horses will cost about 75 to 100

THE DITCHING MACHINE, which has cut more than 20 miles of ditch in one season.

A MACHINE for HUSKING, SHELLING, SEPARATING, WINNOWER, and putting in the bag, corn or any kind of grain, at the rate of 600 bushels of corn, per day, or 2000 bushels of wheat in one week.

A MACHINE for PLANING COTTON, CORN, BEETS, RUTA BAGA, CARROTS, TURNIPS, onions, and all kinds of garden seeds—a most valuable machine. 25

Also, CORN & COB CRUSHERS, Mortars & Planing machines, Trenching do.; Gear Drill Stocks, Ratchet Drills, Screw Setters, Turning Lathes and Circular Saw Arms, benches for tenoning the same, &c.; and Cutting and cleaning Chisels for morticing machines. GEO. PAGE,

Who has removed his establishment to West Baltimore street extended, beyond Cove street, and near Fells' Drovers' Inn j 20
The subscriber is authorized to receive orders for any of the above implements. S. SANDS.

AGRICULTURAL IMPLEMENTS.

The Subscriber acknowledges with gratitude the liberal patronage he has received from the public since the establishment of his Repository in 1825.

During this long period he has studied successfully his own interest by identifying them with the interest of his customers in being prompt and faithful in the execution of their orders.

His present facilities for manufacturing agricultural implements, are not surpassed by any other establishment in this country, he can therefore afford them on as reasonable terms as any other person for the same quality of work. His present stock of implements are extensive both in quality and variety to which he would invite the attention of those who wish to purchase.

A liberal discount will be made to all cash purchasers, and those who purchase to sell again.

The following names are some of his leading articles, viz: His PATENT CYLINDRICAL STRAW CUTTERS, wood and iron frames but all with his patent double eccentric feeders, with or without extra Knives, prices varying from \$33 to \$110, subject to cash discount, he challenges the world to produce a better machine for cutting long forage. Myer's WHEAT FAN and ELLIOTT'S PATENT HORIZONTAL WHEAT FANS, both a very superior article. Fox & Borland's PATENT THRESHING MACHINES and Martineau's PATENT HORSE POWERS, also -upper or articles.—A great variety of PLOUGHS, wrought and cast Shares, of all sizes and prices; Gid on Davis's improved PLOUGHS, of Davis's own make of Patterns, which are sufficiently known to the public not to require recommendation; 100 CORN CULTIVATORS, also expanding CULTIVATORS, both iron and wood frames, and new plan; TOBACCO CULTIVATORS.

F. H. Smith's PATENT LIME SPREADERS, the utility of which has been made known to the public; together with a general assortment of FARMING IMPLEMENTS; PLOUGH CASTINGS of every description and superior quality kept constantly on hand at retail or by the ton; also, MACHINE and other CASTINGS furnished at short notice and on reasonable terms, his iron Foundry being furnished with the best materials and experienced workmen with ample machinery running by steam power for turning and fitting up machinery.

ALSO—Constantly on hand D. Landreth's superior GARDEN SEEDS;—In store POTATOES and common SEED OATS, TIMOTHY and HERDS SEEDS all of superior quality—All orders will be promptly attended to. JONATHAN S. EASTMAN,

Farmers' Repository, Pratt street, Near the Baltimore & Ohio Rail Road Depot.

AN IMPORTED SPANISH JACK FOR SALE.

This jack was imported from the Island of Minorca, in the U. S. ship Constitution, in 1838; he is between 14½ and 15 hands high, is a dark brown, almost black; he is at present in Fairfax county, Va. but could be brought to this county in a few days, should a purchaser offer. Those of the same importation which have been sold brought \$1500. Any gentleman wanting an animal of this description may not for years have an opportunity of securing one superior to that now offered. The owner will sell him at his fair value, but his object in parting with him is not such as to induce him to sacrifice him. Offers addressed (post paid) to the undersigned will meet prompt attention. SAMUEL SANDS,